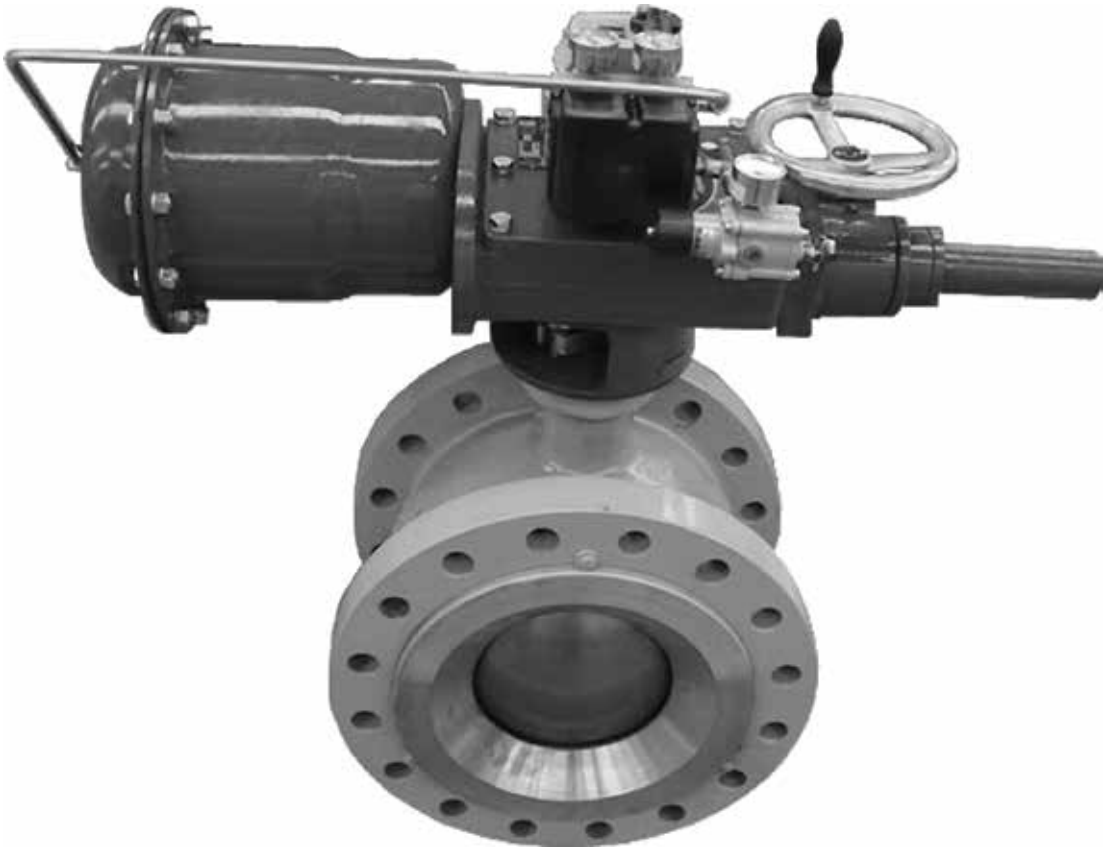
Masoneilan* 36005 Series V-Max* Rotary Control Valves

These high-capacity V-ported control ball valves offer automatic throttling capability with flexible shutoff options, simplified maintenance needs, and enhanced operational reliability.



imagination at work

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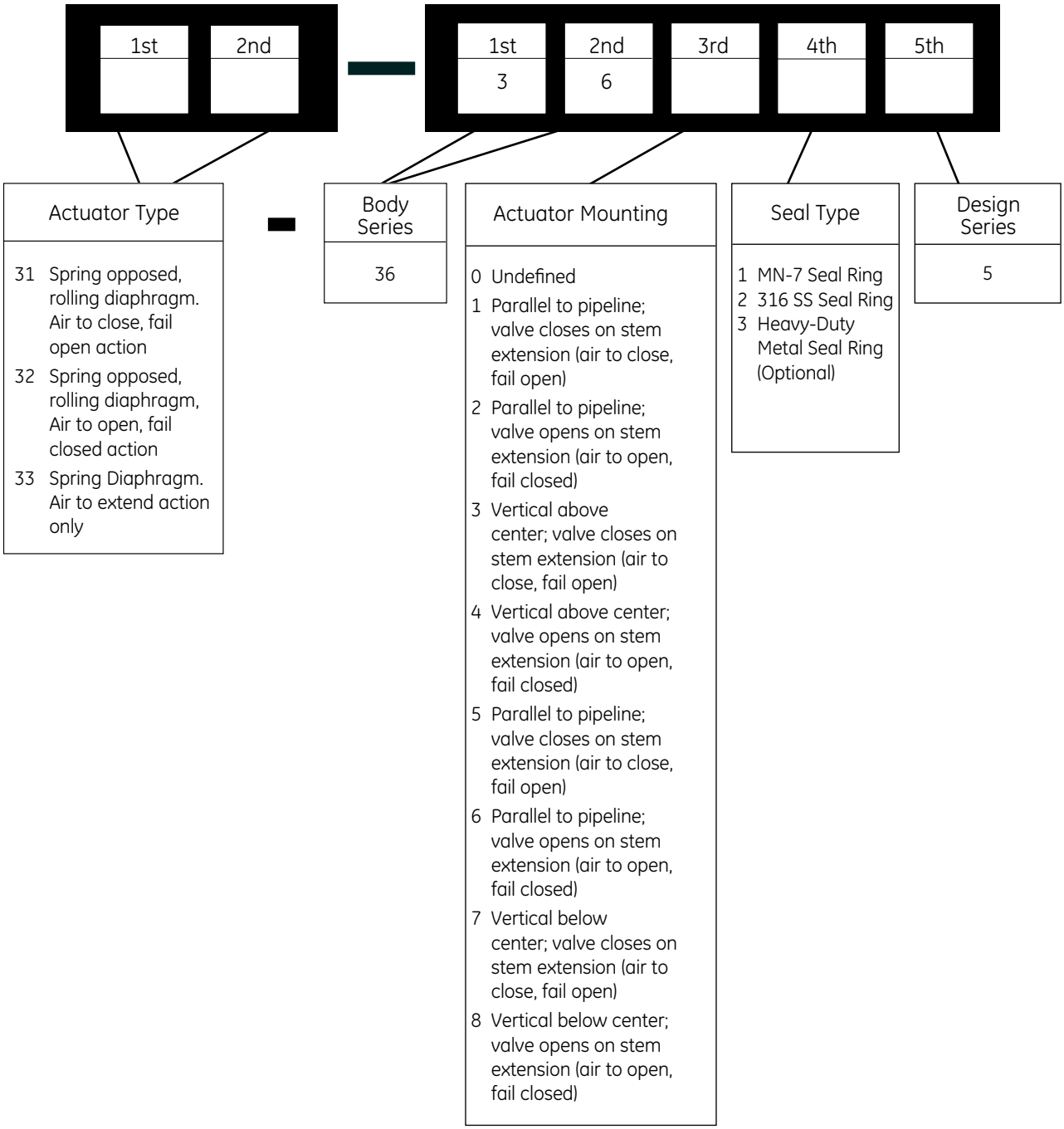
Features and Benefits

The V-Max* rotary control valve offers high-capacity, heavy-duty automatic throttling capability. The valve's advanced design features offer substantial benefits, including:

- **Simplified alignment.** The valve's integrally cast raised face flanges (in compliance with ASME 150 or 300 Class standards) eliminate the need for long tie rods, significantly simplifying the alignment process.
- **Installation flexibility.** To meet a variety of application needs, the valve is available with two different face-to-face dimensions: standard construction complies with ISA S75.04 and IEC 534-3-2 standards and a short pattern complies with the ANSI B16.10 standard (ANSI class 150 only).
- **Enhanced flow capacities.** A straight-through flow pattern provides exceptional capacities, while the patented dual-characterized V-port ball combines an equal percentage flow characteristic with high capacities and greater than 500:1 rangeability.
- Excellent leakage control. A standard EF (emission free) seal packing system provides long-term, zero leakage† shaft sealing performance.
- Flexible, reliable shutoff options. Three different seal types provide flexible solutions for a variety of applications.
  - — MN-7 Seal Ring – This low-friction polymeric seal ring provides reliable Class VI shutoff capability.
  - — 316 Stainless Steel Seal Ring – This unique seal ring design does not require shims. It achieves Class IV shutoff and higher temperature capability when combined with satellite bearings and flexible graphite packing.
  - — Optional Heavy-duty Metal Seal Ring – This optional (NPS1-6) heavy-duty seal ring provides long service life in harsh applications. The wiping action of the seal ring against the ball prevents buildup of contaminants, helping maintain long-term performance and reliable Class IV shutoff.
- **Reliable operation, simplified maintenance.** Full involute spline connections on plug, shaft, and actuator connections virtually eliminate backlash, enhancing operational reliability and simplifying maintenance needs. Changing the ring seal requires only the simple removal of two machine screws on the inlet flange.

† Factory Mutual certified report

Numbering System

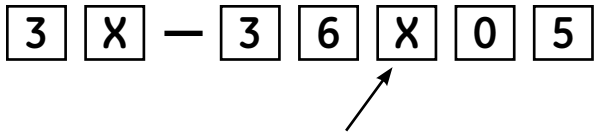


Note:

Actuator sizes B and C are only supplied in positions 3, 4, 7 or 8.

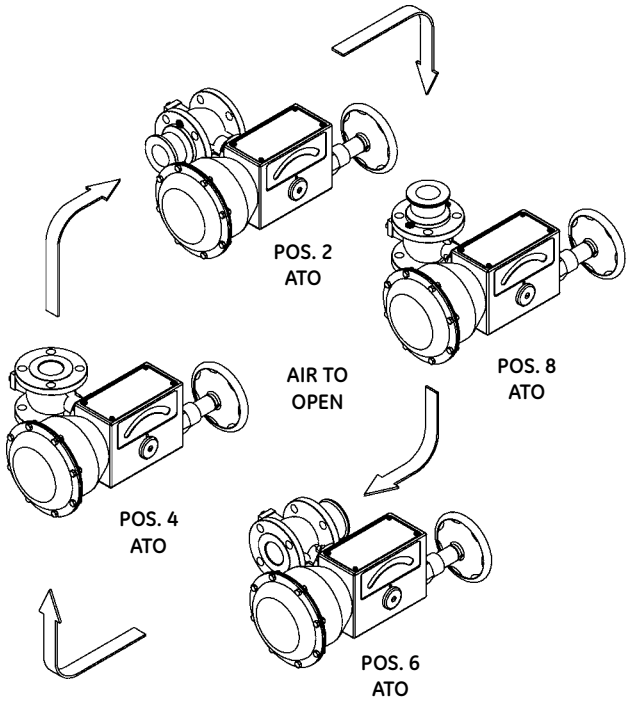
Actuator Mounting Guide

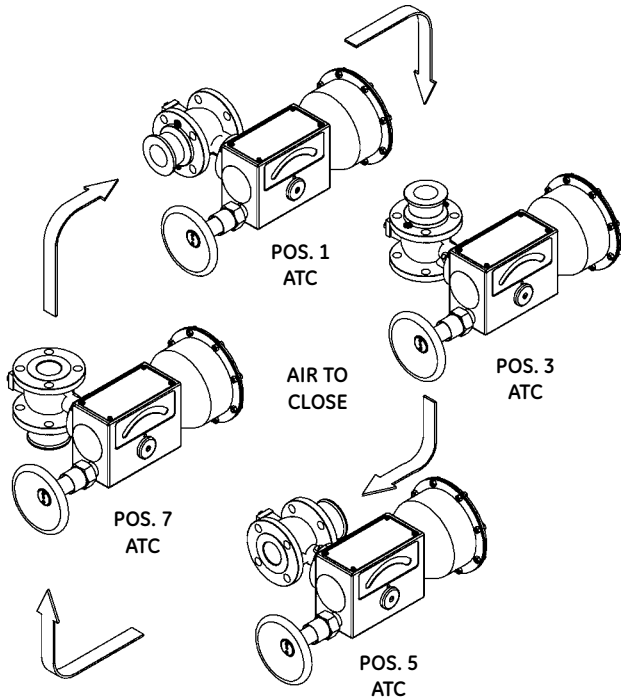
V-Max Valves



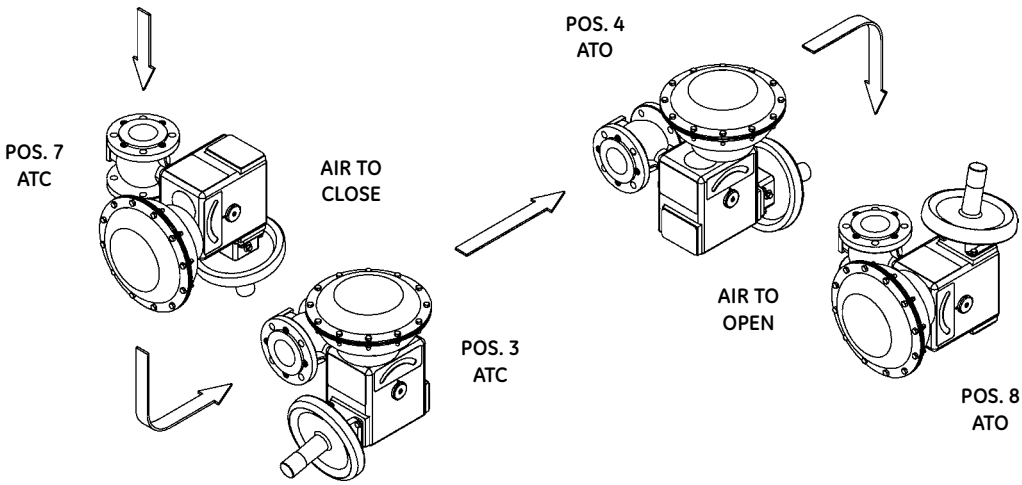
Actuator position in relation to valve body numbering system: 1 to 8.

Actuator Model 33, Size AC





Actuator Model 33, Sizes B and C



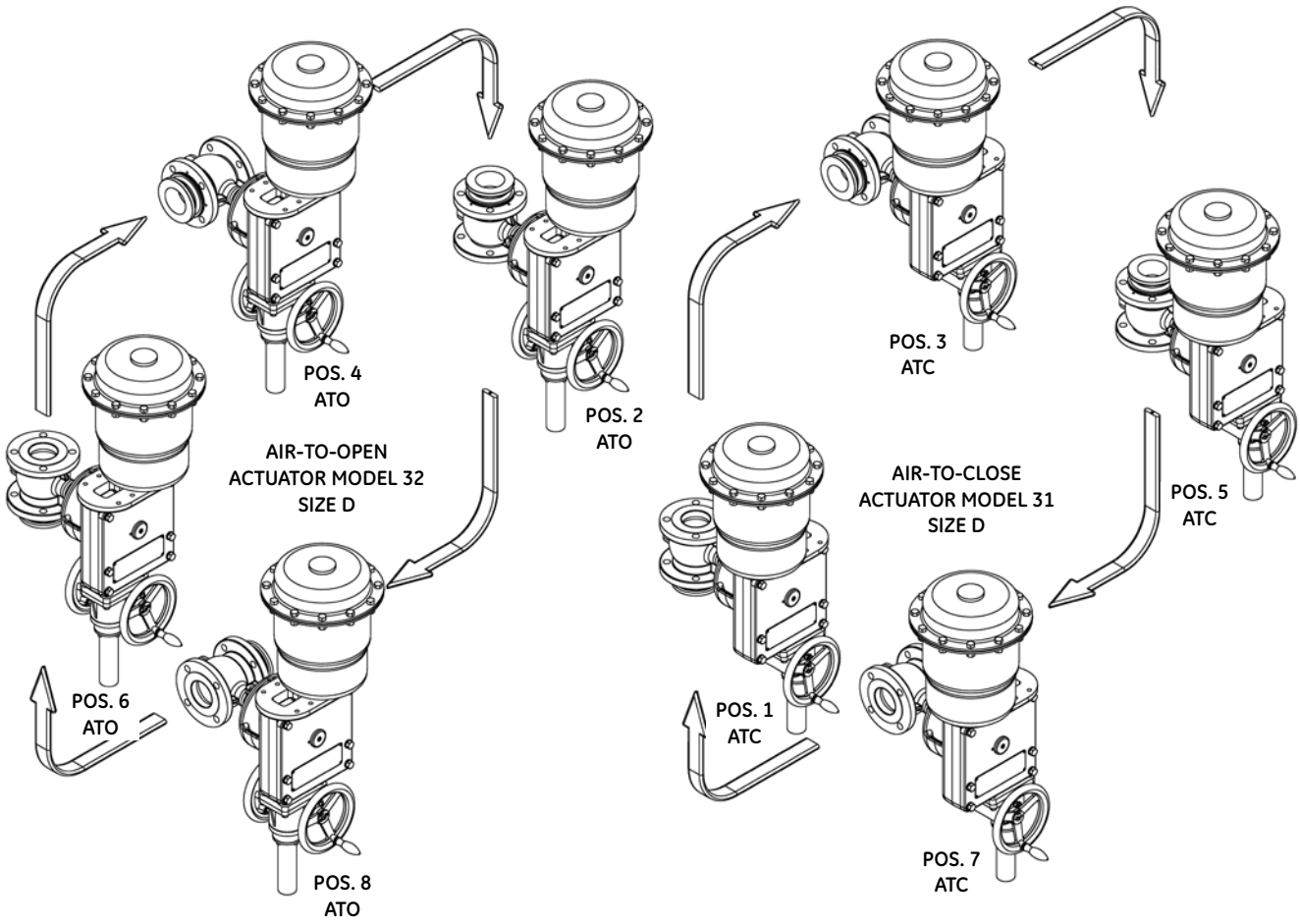
Actuator Mounting Guide

V-Max Valves

3 X – 3 6 X 0 5

Actuator position in relation to valve body numbering system: 1 to 8.

Actuator Models 31 and 32 (Size D)



General Data

Body

Type:	Cast with integral bonnet
Flow Direction:	Flow to open
Materials:	Carbon steel 317 Stainless steel
Body Pressure Rating:	ANSI 150 or 300 Depending on flange rating
End Connections:	Flanged – bolts to ANSI Class 150 or 300 rated flanges (1-inch to 12-inch) (DN 25 – 300)

Trim

Plug Type:	Dual characterized, high capacity "V" contoured segmented ball
Material:	317 Stainless steel, hard chrome plated
Seat Ring:	MN-7, Standard Metal and Heavy Duty Metal
Materials:	MN-7 Polymeric reinforced PTFE 316 Stainless steel Standard Metal Nitronic 60 Heavy Duty metal (Optional NPS 1-6)
Retainer:	317 Stainless steel
Capacity:	High capacity ball valve
Flow Characteristic:	Equal percentage
C_V Ratio:	Greater than 500:1

Actuators

Spring-Opposed Diaphragm – Model 33

Size	
AC:	30 in^2 (194 cm^2) 2.25-inch (57.2 mm) Stroke 1-inch to 2-inch Valves (DN 25-50)
B:	70 in^2 (452 cm^2) 2.625-inch (66.5 mm) Stroke 2-inch to 4-inch Valves (DN 50-100)
C:	140 in^2 (903 cm^2) 2.625-inch (66.5 mm) Stroke 3-inch to 12-inch Valves (DN 80-300)
Range	
AC:	7-15 psi
B:	7-16 psi
C:	9-16 psi
Air Connection:	1/4 NPT
Yoke:	Cast iron
Bearing:	Sealed radial ball
Auxiliary Handwheel	
AC:	Optional solid disk with locking nut
B:	Optional rising stem push type
C:	Optional rising stem push type

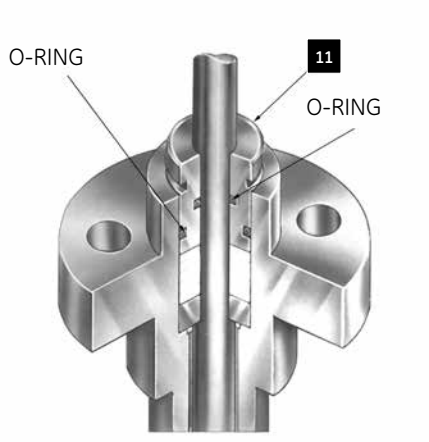
Spring-Opposed Rolling Diaphragm – Model 31/32

Size D:	60 in^2 (387 cm^2) 4.00-inch (101.6 mm) Stroke 6-inch to 12-inch Valves (DN 150-300)
Range D:	12-28 psi 17-40 psi 29-68 psi
Air Connection:	1/4 NPT
Yoke:	Cast iron
Bearing:	Sealed radial ball
Manual Override:	Option jackscrew gear

General Data

Standard Actuator Characteristics

Valve Size		Shaft Diameter		Actuator									
				Model	Size		Spring Range		Effective Area		Actuator Stroke		Handwheel Diameter	
in.	DN	in.	mm		Standard	Oversized	psi	bar	Sq. in.	Sq. cm	in.	mm	in.	mm
1	25	0.62	15.7	33	AC		7-15	.48-1.03	30	194	2.250	57.2	6.5	165
1-1/2	40	0.62	15.7	33	AC		7-15	.48-1.03	30	194	2.250	57.2	6.5	165
2	50	0.62	15.7	33	AC		7-15	.48-1.03	30	194	2.250	57.2	6.5	165
		0.62	23.7	33		B	7-16	.48-1.10	70	452	2.625	66.5	10	254
3	80	0.93	23.7	33	B		7-16	.48-1.10	70	452	2.625	66.5	10	254
		0.93	23.7	33		C	9-16	.62-1.10	140	903	2.625	66.5	10	254
4	100	0.93	23.7	33	B		7-16	.48-1.10	70	452	2.625	66.5	10	254
		0.93	23.7	33		C	9-16	.62-1.10	140	903	2.625	66.5	10	254
6	150	1.2	30.5	33	C		9-16	.62-1.10	140	903	2.625	66.5	10	254
		1.2	30.5	31/32		D	12-28	.83-1.93	60	387	4.000	101.6	8	203
		1.2	30.5	31/32		D	17-40	1.17-2.76	60	387	4.000	101.6	8	203
		1.2	30.5	31/32		D	29-68	2.00-4.69	60	387	4.000	101.6	8	203
8	200	1.2	30.5	33	C		9-16	.62-1.10	140	903	2.625	66.5	10	254
		1.2	30.5	31/32		D	12-28	.83-1.93	60	387	4.000	101.6	8	203
		1.2	30.5	31/32		D	17-40	1.17-2.76	60	387	4.000	101.6	8	203
		1.2	30.5	31/32		D	29-68	2.00-4.69	60	387	4.000	101.6	8	203
10	250	1.37	34.8	33	C		9-16	.62-1.10	140	903	2.625	66.5	10	254
		1.37	34.8	31/32		D	12-28	.83-1.93	60	387	4.000	101.6	8	203
		1.37	34.8	31/32		D	17-40	1.17-2.76	60	387	4.000	101.6	8	203
		1.37	34.8	31/32		D	29-68	2.00-4.69	60	387	4.000	101.6	8	203
12	300	1.37	34.8	33	C		9-16	.62-1.10	140	903	2.625	66.5	10	254
		1.37	34.8	31/32		D	12-28	.83-1.93	60	387	4.000	101.6	8	203
		1.37	34.8	31/32		D	17-40	1.17-2.76	60	387	4.000	101.6	8	203
		1.37	34.8	31/32		D	29-68	2.00-4.69	60	387	4.000	101.6	8	203



Fugitive Emission Containment Package for Zero Leakage†

Standard V-Max Packing Arrangement
EF Seal (Emission Free) **Double O-Ring Seal Packing Follower**

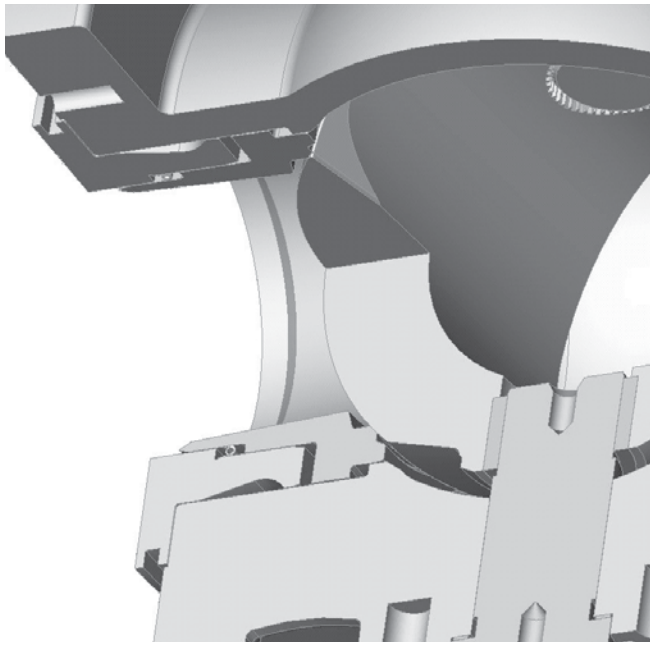
Suitable for use in environmentally sensitive applications, this economical shaft seal solution to fugitive emissions provides long-term, reliable, extremely low emission performance without compromising control performance.

† Factory Mutual certified report

Temperature/Seat Leakage

Standard Metal Seal Ring Temperature Limitations

A strain hardened 316 stainless steel seal ring is an available option when the MN-7 Seal is not suitable. Seat leakage is per ANSI /FCI 70.2 Class IV. The metal seal ring can be used with either MN-7 lined bearings or the optional solid metal bearings. The fluid temperature is limited to 425°F (218°C) when using the MN-7 lined. A high temperature package consisting of metal seal ring, bearings and flexible graphite packing elevates fluid temperature limitations to 600°F (316°C) maximum or ANSI working pressure and temperature limitations. For use in lubricated service only.

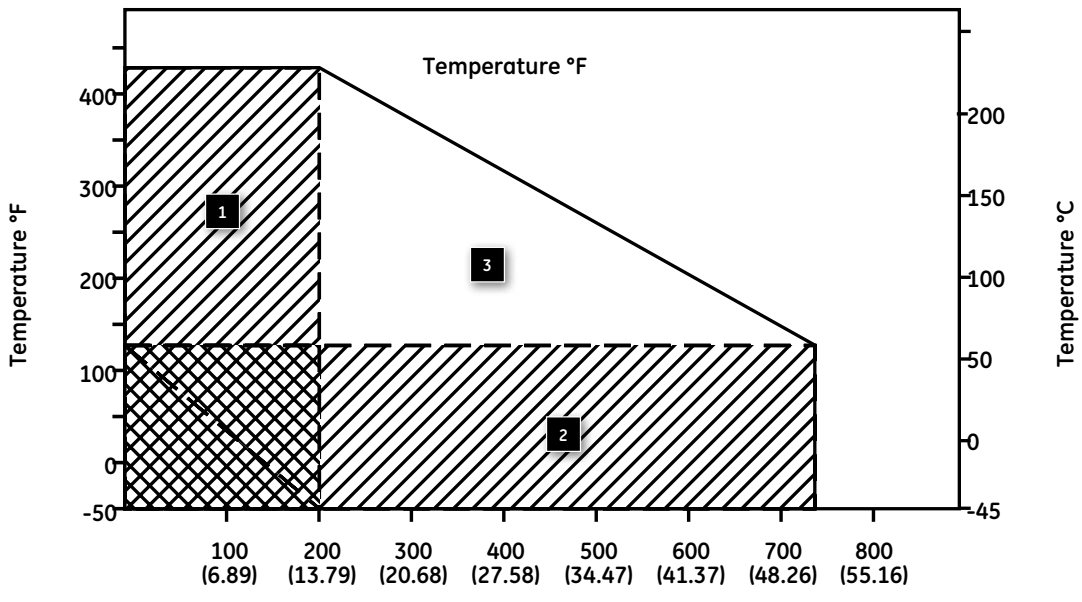


MN-7 Seal Ring Temperature Limitations

The standard MN-7 seal ring provides tight, ANSI/FCI 70.2 Class VI seat leakage. Pressure and temperature ratings of this design are limited as shown in the chart below as well as those shown in the corresponding pressure drop tables.

(Optional) Heavy Duty Metal Seal Ring (Bi-directional Flow)

A solid Heavy Duty Metal seat ring is available (NPS 1-6) when the MN-7 or Standard Metal Seal ring is not suitable. The Heavy Duty Seat ring must be used with solid metal bearings. Fluid temperature is limited to 500°F (260°C) due to the material of the radial seal. Seat leakage is per ANSI/FCI 70.2 Class IV.



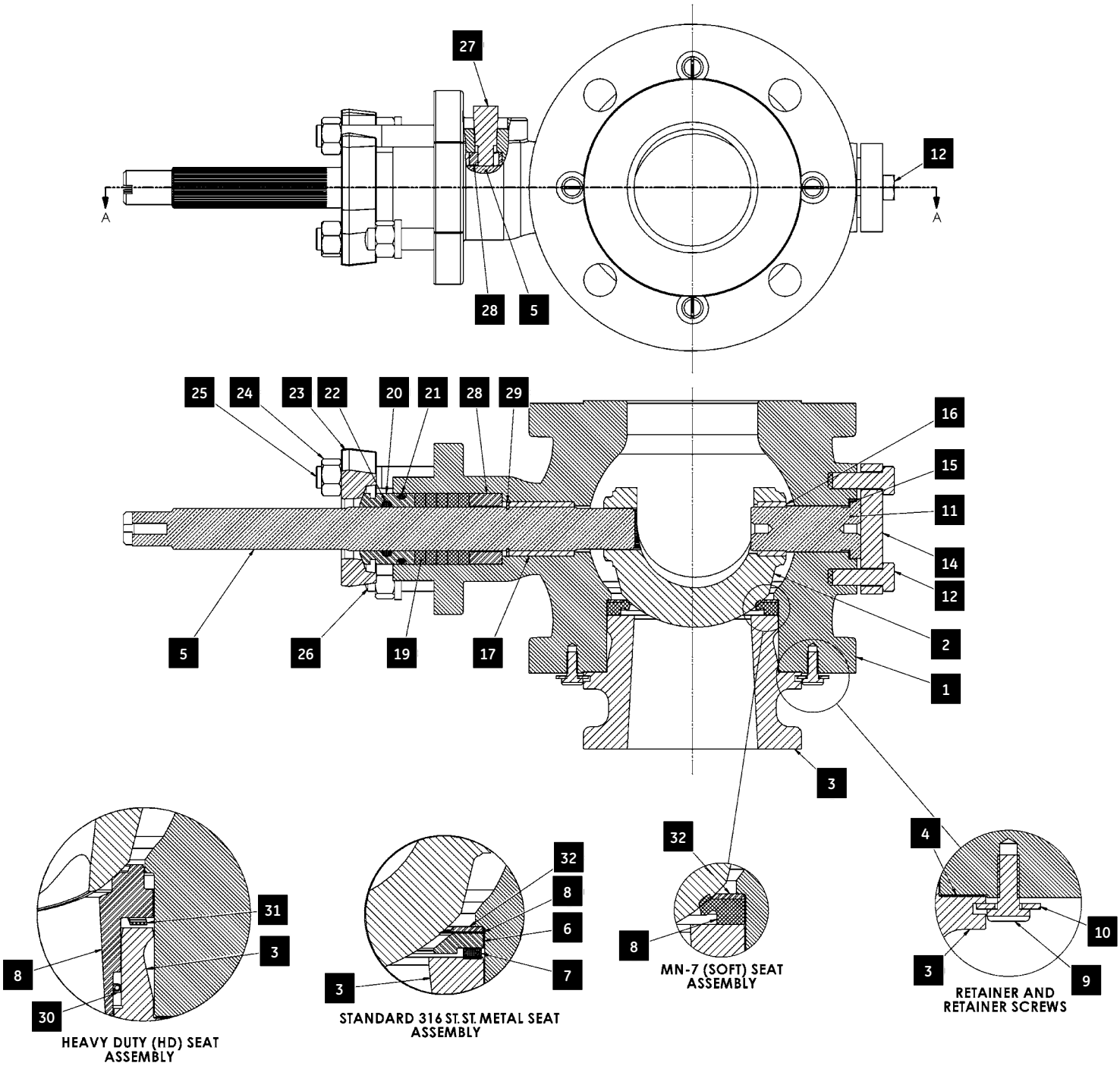
1 Zone of maximum temperature limits
2 Zone of maximum pressure limits
3 Zone of maximum interactive pressure/temperature limits

C_V and F_L versus Travel

Flow Direction: Flow to Open
Flow Characteristics: Equal Percentage
ANSI Class 150 and 300
Valve Sizes: 1 to 12-inch (DN 25-300)

Percent (%) of Max. Opening		10	15	20	30	40	50	60	70	80	90	100
Percent (%) of Max. C_V		0.20%	0.98%	2.15%	5.2%	9.5%	15.0%	22.0%	31.5%	46.5%	72.0%	100.0%
F_L		0.92	0.91	0.90	0.89	0.87	0.83	0.80	0.76	0.72	0.67	0.60
Valve Size		Rated C_V										
in	DN											
1	25	0.11	0.54	1.2	2.9	5.2	8.3	12.1	17	26	40	55
1-1/2	40	0.25	1.2	2.7	6.5	12	19	28	39	58	90	125
2	50	0.34	1.7	3.7	8.8	16	26	37	54	79	122	170
3	80	0.88	4.3	9.5	23	42	66	97	139	205	317	440
4	100	1.48	7.3	16	38	70	111	163	233	344	533	740
6	150	2.50	12	27	65	119	188	275	394	581	900	1250
8	200	3.72	18	40	97	177	279	409	586	865	1339	1860
10	250	6.0	30	65	157	287	453	664	951	1404	2174	3020
12	300	8.8	43	95	229	418	660	968	1386	2046	3168	4400

Materials of Construction



Materials of Construction

Carbon Steel Construction

Ref. No	Temperature Range	-20°F -29°C ▽	+425°F +218°C ▽	+450°F +232°C ▽	+500°F +260°C ▽	+600°F +316°C ▽
	Description	Standard Materials				
1	Body Flanged	ASTM A216 Gr WCB Carbon Steel				
2	Ball Plug	ASTM A351 Gr CG8M Type 317, Hard Chromium Plated				
3	Retainer Standard (ISA S75.04)	ASTM A351 Gr CG8M Type 317				
	Retainer Extended (ANSI B16.10)					
4	Gasket (retainer body)	Flexible Graphite				
5	Stem Shaft	ASTM A564 Gr 630 H1075				
		(NACE) Nitronic 50				
6	Backup Ring (flat metal seat)	ASTM A240 Type 317L Stainless Steel				
7	Gasket (flat metal seat)	316 Stainless Steel/Flexible Graphite				
8	Seat Ring Flexible Metal	ASTM A66 1/4 Hard Strain Hardened 316 Stainless Steel Sheet				
	Seat Ring	MN-7				
	Seat Ring Heavy Duty Rigid	Nitronic 60 Stainless Steel				
9	Slot Button Head Screw	Carbon Steel Plated				
10	Flat Washer	Carbon Steel Plated				
11	Pin Shaft	ASTM A564 Gr 630 H1075				
		Nitronic 50				
12	Cap Screw, End Flange	ASTM A193 Gr B8				
14	End Flange	ASTM A36 Plated				
15	Gasket Pin Shaft	Nitrile Bound Acrylic				
16	Lower Bushing	316 Stainless Steel/MN-7 Lined				
		Stellite				
17	Upper Bushing	316 Stainless Steel/MN-7 Lined				
		Stellite				
19	Packing Set	Crane 285K - TFE Aramid Core				
		Flexible Graphite				
20	Packing Follower	ASTM A582 Type 303 St. St.				
21	O-Ring	Viton				
22	O-Ring	Viton				
23	Packing Box Flange	ASTM A216 Gr WCC Plated				
24	Nut, Packing Flange Stud	ASTM A194 Gr 8				
25	Stud, Packing Flange	Alloy Steel ASTM A193 Gr B8				
26	Stud, Bonnet	Alloy Steel ASTM A193 Gr B8				
27	Safety Pin	ASTM A479 Type 316				
28	Packing Adapter	ASTM A479 Type 316				
29	Shaft Ring	ASTM A564 Gr 632				
30	Radial Seal, HD Seat	GFP Graphite Fiber Reinforced PTFE Seal, Hastelloy C276 Spring				
31	Wave Spring, HD Seat	Inconel X-750 Material (AM-5699) Precipitation Hardened				
32	Seat Support Ring, Downstream	ASTM A240 Type 317L Stainless Steel				
Ref. No	Temperature Range	Δ -20°F -29°C	Δ +425°F +218°C	Δ +450°F +232°C	Δ +500°F +260°C	+600°F +316°C

Materials of Construction

Stainless Steel Construction

Ref. No	Temperature Range	-50°F -46°C	+425°F +218°C	+450°F +232°C	+500°F +260°C	+600°F +316°C
	Description	Standard Materials				
1	Body Flanged	ASTM A351 Gr CG8M Type 317				
2	Ball Plug	ASTM A351 Gr CG8M Type 317, Hard Chromium Plated				
3	Retainer Standard (ISA S75.04)	ASTM A351 Gr CG8M Type 317				
	Retainer Extended (ANSI B16.10)					
4	Gasket (retainer body)	Flexible Graphite				
5	Stem Shaft	Nitronic 50 (Standard)				
		ASTM A564 Gr 630 H1075 (Optional)				
6	Backup Ring (flat metal seat)	ASTM A240 Type 317L Stainless Steel				
7	Gasket (flat metal seat)	316 Stainless Steel/Flexible Graphite				
8	Seat Ring Flexible Metal	ASTM A66 1/4 Hard Strain Hardened 316 Stainless Steel Sheet				
	Seat Ring	MN-7				
	Seat Ring Heavy Duty Rigid	Nitronic 60 Stainless Steel				
9	Slot Button Head Screw	Carbon Steel Plated				
10	Flat Washer	Carbon Steel Plated				
11	Pin Shaft	Nitronic 50 (Standard)				
		ASTM A564 Gr 630 H1075 (Optional)				
12	Cap Screw, End Flange	ASTM A193 Gr B8				
14	End Flange	ASTM A36 Plated				
15	Gasket Pin Shaft	Nitrile Bound Acrylic				
16	Lower Bushing	316 Stainless Steel/MN-7 Lined				
		Stellite				
17	Upper Bushing	316 Stainless Steel/MN-7 Lined				
		Stellite				
19	Packing Set	Crane 285K - TFE Aramid Core				
		Flexible Graphite				
20	Packing Follower	ASTM A582 Type 303 St. St.				
21	O-Ring	Viton				
22	O-Ring	Viton				
23	Packing Box Flange	ASTM A216 Gr WCC Plated				
24	Nut, Packing Flange Stud	ASTM A194 Gr 8				
25	Stud, Packing Flange	Alloy Steel ASTM A193 Gr B8				
26	Stud, Bonnet	Alloy Steel ASTM A193 Gr B8				
27	Safety Pin	ASTM A479 Type 316				
28	Packing Adapter	ASTM A479 Type 316				
29	Shaft Ring	ASTM A564 Gr 632				
30	Radial Seal, HD Seat	GFP Graphite Fiber Reinforced PTFE Seal, Hastelloy C276 Spring				
31	Wave Spring, HD Seat	Inconel X-750 Material (AMS 5699) Precipitation Hardened				
32	Seat Support Ring, Downstream	317 Stainless Steel				
Ref. No	Temperature Range	-50°F -46°C	+425°F +218°C	+450°F +232°C	+500°F +260°C	+600°F +316°C

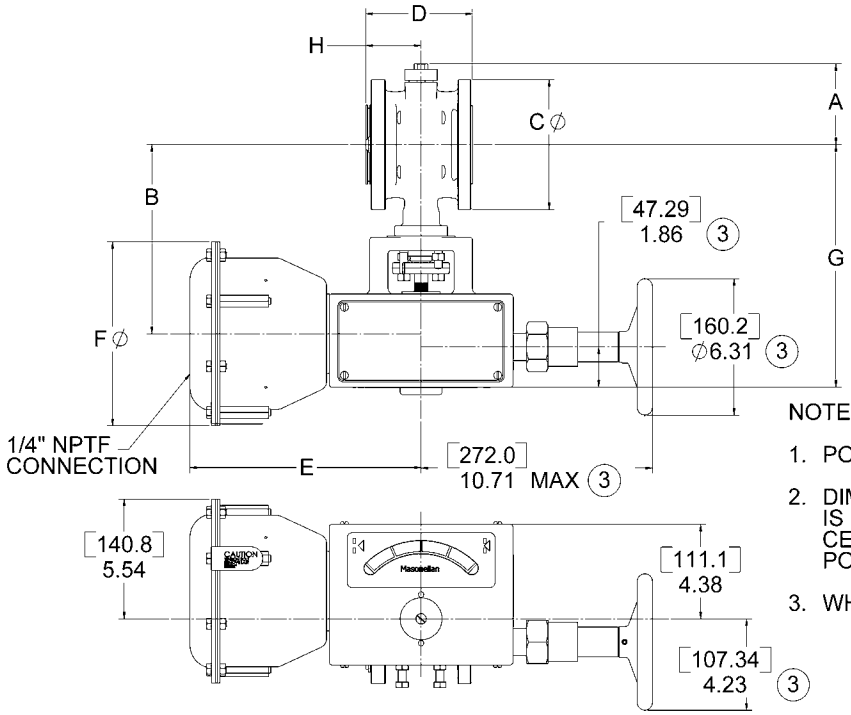
Materials of Construction

Carbon Steel NACE Construction — Complies with NACE MR0103-2003

Ref. No	Temperature Range	-50°F -46°C ∇	-20°F -29°C ∇	+425°F +218°C ∇	+450°F +232°C ∇	+500°F +260°C ∇	+600°F +316°C ∇
	Description	Standard Materials					
1	Body Flanged		ASTM A216 Gr WCB Carbon Steel				
		ASTM A351 Gr CG8M Type 317					
2	Ball Plug	ASTM A351 Gr CG8M Type 317, Hard Chromium Plated					
3	Retainer Standard (ISA S75.04)	ASTM A351 Gr CG8M Type 317					
	Retainer Extended (ANSI B16.10)						
4	Gasket (retainer body)	Flexible Graphite					
5	Stem Shaft	Nitronic 50					
6	Backup Ring (flat metal seat)	ASTM A240 Type 317L Stainless Steel					
7	Gasket (flat metal seat)	316 Stainless Steel/Flexible Graphite					
8	Seat Ring Flexible Metal	ASTM A66 1/4 Hard Strain Hardened 316 Stainless Steel Sheet					
	Seat Ring	MN-7					
	Seat Ring Heavy Duty Rigid	Nitronic 60 Stainless Steel					
9	Slot Button Head Screw	Carbon Steel Plated					
10	Flat Washer	Carbon Steel Plated					
11	Pin Shaft	Nitronic 50					
12	Cap Screw, End Flange	ASTM A193 Gr B8					
14	End Flange	ASTM A36 Plated					
15	Gasket Pin Shaft	Nitrile Bound Acrylic					
16	Lower Bushing	316 Stainless Steel/MN-7 Lined					
		Stellite					
17	Upper Bushing	316 Stainless Steel/MN-7 Lined					
		Stellite					
19	Packing Set	Crane 285K - TFE Aramid Core					
		Flexible Graphite					
20	Packing Follower	ASTM A582 Type 303 St. St.					
21	O-Ring	Viton					
22	O-Ring	Viton					
23	Packing Box Flange	ASTM A216 Gr WCC Plated					
24	Nut, Packing Flange Stud	ASTM A194 Gr 8					
25	Stud, Packing Flange	Alloy Steel ASTM A193 Gr B8					
26	Stud, Bonnet	Alloy Steel ASTM A193 Gr B8					
27	Safety Pin	ASTM A479 Type 316					
28	Packing Adapter	ASTM A479 Type 316					
29	Shaft Ring	ASTM A564 Gr 632					
30	Radial Seal, HD Seat	GFP Graphite Fiber Reinforced PTFE Seal, Hastelloy C276 Spring					
31	Wave Spring, HD Seat	Inconel X-750 Material (AMS 5699) Precipitation Hardened					
32	Seat Support Ring, Downstream	ASTM A240 Type 317L Stainless Steel					
		Δ	Δ		Δ	Δ	Δ
Ref. No	Temperature Range	-50°F -46°C	-20°F -29°C	+425°F +218°C	+450°F +232°C	+500°F +260°C	+600°F +316°C

Dimensions

Actuator Model 33, Size AC – inches [millimeters]



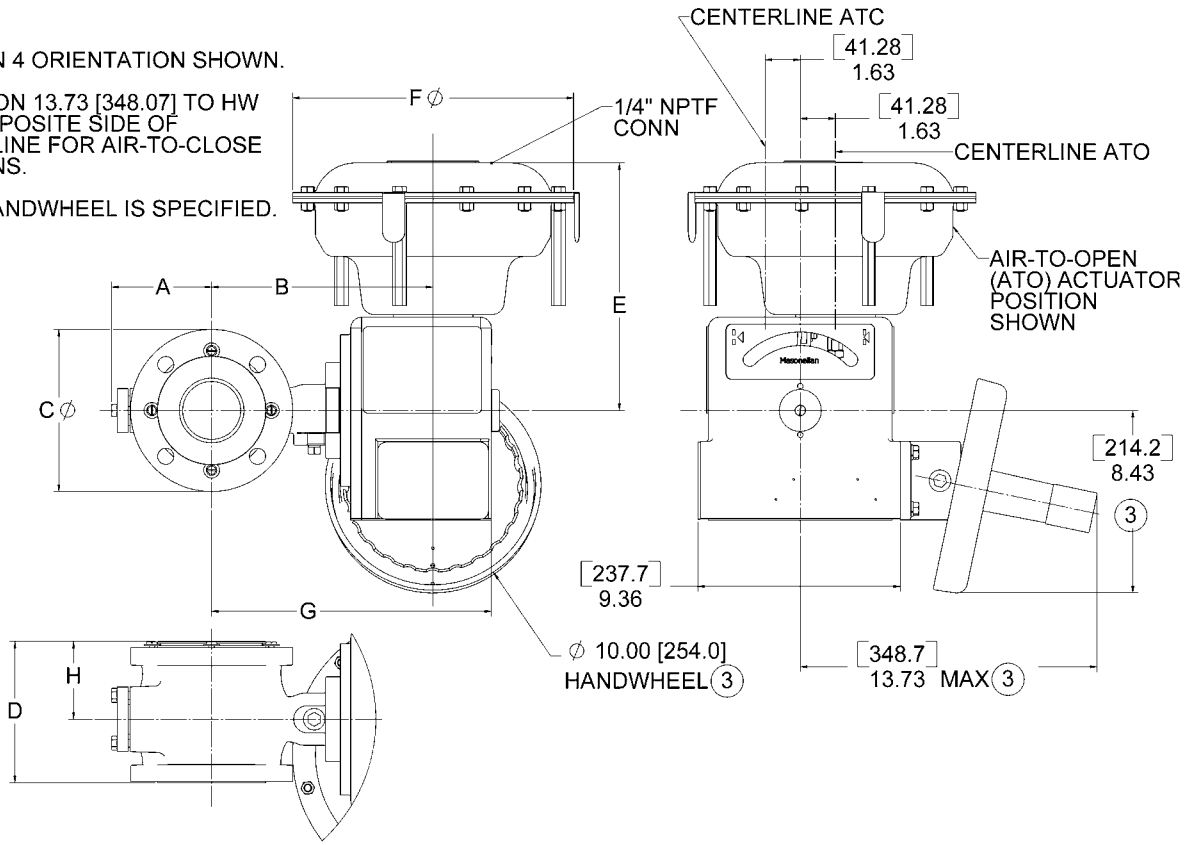
NOTES:

1. POSITION 4 ORIENTATION SHOWN.
2. DIMENSION 10.71 [272.0] TO HW IS ON OPPOSITE SIDE OF CENTERLINE FOR AIR-TO-CLOSE POSITIONS.
3. WHEN HANDWHEEL IS SPECIFIED.

Actuator Model 33, Size B and C – inches [millimeters]

NOTES:

1. POSITION 4 ORIENTATION SHOWN.
2. DIMENSION 13.73 [348.07] TO HW IS ON OPPOSITE SIDE OF CENTERLINE FOR AIR-TO-CLOSE POSITIONS.
3. WHEN HANDWHEEL IS SPECIFIED.



Dimensions

Actuator Model 33, Sizes AC, B and C (inches)

Valve Size		Actuator Size		A		B	C[1]		Face-to-Face D		E	F	G	Center-to-Face H	
in.	DN	Size	Sq. In.	ANSI 150	ANSI 300		ANSI 150	ANSI 300	Standard ISA S75.04[2]	Optional ASME B16.10[3]				Standard ISA S75.04[2]	Optional ASME B16.10[3]
1	25	AC	30	2.74	2.74	8.06	4.25	4.88	4.00	5.00	10.70	8.50	10.53	2.12	3.12
1.5	40	AC	30	3.13	4.08	8.33	5.00	6.12	4.47	6.49	10.70	8.50	10.80	2.43	4.46
2	50	AC	30	3.92	5.05	8.74	6.00	6.50	4.93	7.01	10.70	8.50	11.21	2.56	4.64
		B	70	3.92	5.05	8.52	6.00	6.50	4.93	7.01	11.45	13.00	11.21	2.56	4.64
3	80	B	70	4.64	4.64	10.24	7.50	8.25	6.54	8.00	11.45	13.00	12.93	3.59	5.06
		C	140	4.64	4.64	10.24	7.50	8.25	6.54	8.00	15.07	17.50	12.93	3.59	5.06
4	100	B	70	5.48	5.48	10.87	9.00	10.00	7.61	9.00	11.45	13.00	13.56	3.95	5.50
		C	140	5.48	5.48	10.87	9.00	10.00	7.61	9.00	15.07	17.50	13.56	3.95	5.50
6	150	C	140	6.76	6.76	12.09	11.00	12.50	8.99	10.52	15.07	17.50	14.78	4.85	6.37
8	200	C	140	7.88	7.88	13.81	13.50	15.00	9.59	11.50	15.07	17.50	16.50	5.03	6.95
10	250	C	140	9.46	9.46	15.75	16.00	17.50	11.69	13.02	15.07	17.50	18.44	6.09	7.42
12	300	C	140	10.63	10.63	16.92	19.00	20.50	13.33	14.00	15.07	17.50	19.61	7.52	8.19

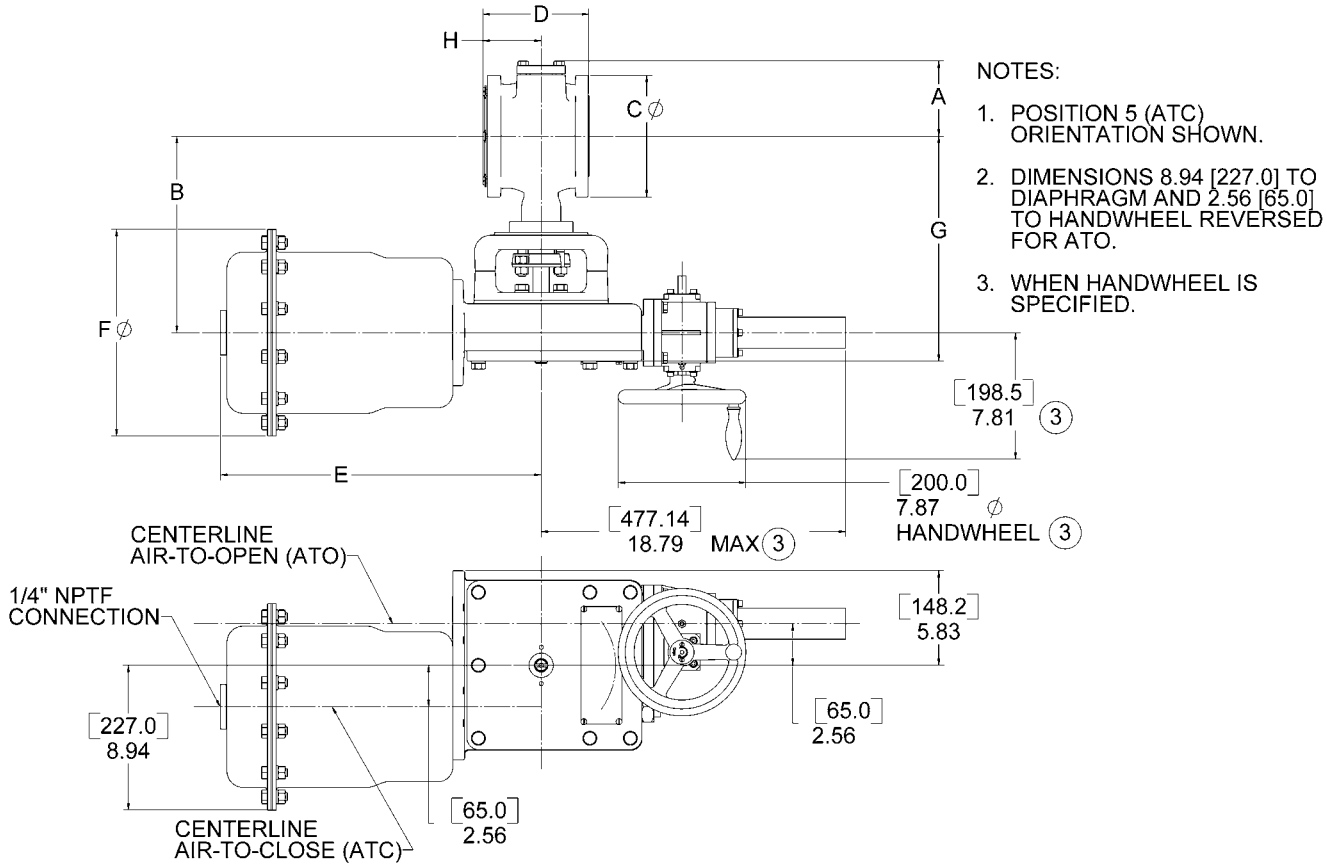
Actuator Model 33, Sizes AC, B and C (millimeters)

Valve Size		Actuator Size		A		B	C[1]		Face-to-Face D		E	F	G	Center-to-Face H	
in.	DN	Size	Sq. cm	ANSI 150	ANSI 300		ANSI 150	ANSI 300	Standard ISA S75.04[2]	Optional ASME B16.10[3]				Standard ISA S75.04[2]	Optional ASME B16.10[3]
1	25	AC	194	69.60	69.60	204.72	107.95	123.95	101.60	127.00	271.78	215.90	267.46	53.85	79.25
1.5	40	AC	194	79.50	103.63	211.58	127.00	155.45	113.54	164.85	271.78	215.90	274.32	61.72	113.28
2	50	AC	194	99.57	128.27	222.00	152.40	165.10	125.22	178.05	271.78	215.90	284.73	65.02	117.86
		B	452	99.57	128.27	216.41	152.40	165.10	125.22	178.05	290.83	330.20	284.73	65.02	117.86
3	80	B	452	117.86	117.86	260.10	190.50	209.55	166.12	203.20	290.83	330.20	328.42	91.19	128.52
		C	903	117.86	117.86	260.10	190.50	209.55	166.12	203.20	382.78	444.50	328.42	91.19	128.52
4	100	B	452	139.19	139.19	276.10	228.60	254.00	193.29	228.60	290.83	330.20	344.42	100.33	139.70
		C	903	139.19	139.19	276.10	228.60	254.00	193.29	228.60	382.78	444.50	344.42	100.33	139.70
6	150	C	903	171.70	171.70	307.09	279.40	317.50	228.35	267.21	382.78	444.50	375.41	123.19	161.80
8	200	C	903	200.15	200.15	350.77	342.90	381.00	243.59	292.10	382.78	444.50	419.10	127.76	176.53
10	250	C	903	240.28	240.28	400.05	406.40	444.50	296.93	330.71	382.78	444.50	468.38	154.69	188.47
12	300	C	903	270.00	270.00	429.77	482.60	520.70	338.58	355.60	382.78	444.50	498.09	191.01	208.03

Notes:
1. Conforms to ASME/ANSI Standard B16.5 - 1996 "Pipe Flanges and Flange Fittings."
2. Conforms to ISA Standard S75.04.
3. Conforms to ASME Standard B16.10 - 1992 (formerly ANSI Standard B16.10 - 1973) Short Pattern Ball. Available for ANSI 150 Class Valves ONLY.

Dimensions

Actuator Model 31/32, Size D – inches [millimeters]



NOTES:

1. POSITION 5 (ATC) ORIENTATION SHOWN.
2. DIMENSIONS 8.94 [227.0] TO DIAPHRAGM AND 2.56 [65.0] TO HANDWHEEL REVERSED FOR ATO.
3. WHEN HANDWHEEL IS SPECIFIED.

Dimensions

Actuator Model 31/32, Size D (inches)

Valve Size		Actuator Size		A		B	C[1]		Face-to-Face D		E	F	G	Center-to-Face H	
in.	DN	Size	Sq. In.	ANSI 150	ANSI 300		ANSI 150	ANSI 300	Standard ISA S75.04[2]	Optional ASME B16.10[3]				Standard ISA S75.04[2]	Optional ASME B16.10[3]
3	80	D	60	4.64	4.64	12.12	7.50	8.25	6.54	8.00	19.78	12.75	13.88	3.59	5.06
4	100	D	60	5.48	5.48	12.75	9.00	10.00	7.61	9.00	19.78	12.75	14.51	3.95	5.50
6	150	D	60	6.76	6.76	14.06	11.00	12.50	8.99	10.52	19.78	12.75	15.82	4.85	6.37
8	200	D	60	7.88	7.88	15.69	13.50	15.00	9.59	11.50	19.78	12.75	17.45	5.03	6.95
10	250	D	60	9.46	9.46	17.63	16.00	17.50	11.69	13.02	19.78	12.75	19.39	6.09	7.42
12	300	D	60	10.63	10.63	18.80	19.00	20.50	13.33	14.00	19.78	12.75	20.56	7.52	8.19

Actuator Model 31/32, Size D (millimeters)

Valve Size		Actuator Size		A		B	C[1]		Face-to-Face D		E	F	G	Center-to-Face H	
in.	DN	Size	Sq. cm	ANSI 150	ANSI 300		ANSI 150	ANSI 300	Standard ISA S75.04[2]	Optional ASME B16.10[3]				Standard ISA S75.04[2]	Optional ASME B16.10[3]
3	80	D	387	117.86	117.86	307.85	190.50	209.55	166.12	203.20	502.41	323.85	352.55	91.19	128.52
4	100	D	387	139.19	139.19	323.85	228.60	254.00	193.29	228.60	502.41	323.85	368.55	100.33	139.70
6	150	D	387	171.70	171.70	357.12	279.40	317.50	228.35	267.21	502.41	323.85	401.83	123.19	161.80
8	200	D	387	200.15	200.15	398.53	342.90	381.00	243.59	292.10	502.41	323.85	443.23	127.76	176.53
10	250	D	387	240.28	240.28	447.80	406.40	444.50	296.93	330.71	502.41	323.85	492.51	154.69	188.47
12	300	D	387	270.00	270.00	477.52	482.60	520.70	338.58	355.60	502.41	323.85	522.22	191.01	208.03

Notes:
1. Conforms to ASME/ANSI Standard B16.5 - 1996 "Pipe Flanges and Flange Fittings."
2. Conforms to ISA Standard S75.04.
3. Conforms to ASME Standard B16.10 - 1992 (formerly ANSI Standard B16.10 - 1973) Short Pattern Ball. Available for ANSI 150 Class Valves ONLY.

Assembly Weights

Valve Size		Actuator		Valve and Actuator Assembly Weights (without Manual Override)						Manual Override	
				Standard ISA S75.04 Face-to-Face				Optional ASME B16.10 Face-to-Face			
				ANSI Class 150 Flanged		ANSI Class 300 Flanged		ANSI Class 150 Flanged ONLY		Add to Valve / Actuator Weight	
in.	DN	Model	Size	lbs	Kg	lbs	Kg	lbs	Kg	lbs	Kg
1	25	33	AC	50	22	53	24	50	23	7	3
1.5	40	33	AC	54	24	61	27	56	25	7	3
2	50	33	AC	60	27	81	37	63	29	7	3
		33	B	101	46	122	55	103	47	27	12
3	80	33	B	124	56	134	61	128	58	27	12
		33	C	182	82	192	87	186	84	27	12
		31/32	D	227	103	237	107	231	105	12	5
4	100	33	B	147	67	166	75	152	69	27	12
		33	C	205	93	224	101	210	95	27	12
		31/32	D	250	113	269	122	255	116	12	5
6	150	33	C	250	114	288	131	260	118	27	12
		31/32	D	295	134	333	151	305	138	12	5
8	200	33	C	303	137	359	163	326	148	27	12
		31/32	D	348	158	404	183	371	168	12	5
10	250	33	C	393	178	416	189	480	217	27	12
		31/32	D	438	199	461	209	525	238	12	5
12	300	33	C	520	236	540	245	642	291	27	12
		31/32	D	565	256	585	265	687	312	12	5

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